

BLASTOPHRAGMA GEN. NOV. FOR TWO INTERESTING HYPHOMYCETES FROM SOUTHEAST ASIA

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ABSTRACT - Two interesting dematiaceous hyphomycetes are described and their taxonomy discussed in this paper. Both share several features: simple mononematous conidiophores with integrated apical polyblastic conidiogenous cells and solitary, acrogenous, distoseptate blastoconidia produced on the conidiogenous cell and its sympodial proliferations. They are accommodated in a new genus, *Blastophragma* as two new species: 1. *B. subulata* on dead twigs of an unidentified plant from Malaysia, and 2. *B. rostrata* on dead twigs of *Antidesma cuspidatum* Muell. (Stilaginaceae) from Singapore.

RÉSUMÉ - Deux hyphomycètes dématiés sont décrits et leur taxonomie discutée dans cet article. Les deux champignons ont des caractères communs: des conidiophores simples mononémés avec des cellules conidiogènes apicales polyblastiques à proliférations sympodiales, des blastoconidies acrogènes, distoseptées. Il sont regroupés dans ■ nouveau genre: *Blastophragma* en deux espèces: *B. subulata* espèce-type sur rameaux morts non identifiés de Malaisie, et *B. rostrata* sur rameaux morts de *Antidesma cuspidatum* Muell. (Stilaginaceae) à Singapour.

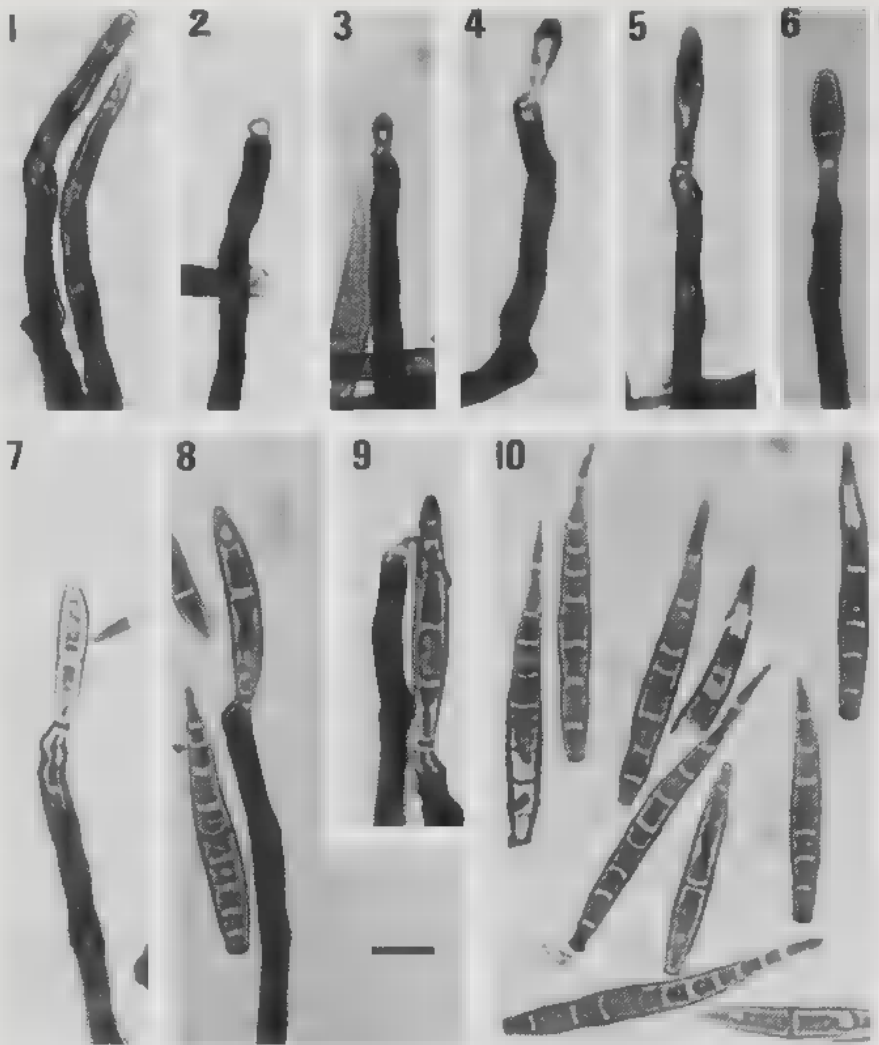
KEY WORDS : *Blastophragma*, hyphomycetes, taxonomy.

As part of the author's exploration of tropical microfungi, two interesting hyphomycetes were collected from south-east Asia during his stay at the National University of Singapore in 1986-87. They are described and their taxonomy discussed, in this paper.

DESCRIPTION OF THE FUNGI

1. An interesting hyphomycete was collected on dead twigs of an unidentified plant from the Cameroon Highlands, Malaysia.

The fungus produces effuse, greyish to brown, superficial colonies on the substratum. The mycelium is composed of repent, branched, subhyaline to brown, septate hyphae 2-4 μm wide. The conidiophores (figs. 1, 2, 7) are macronematous, mononematous, crowded, caespitose, erect, straight, bent or flexuous, mostly simple, dark brown, geniculate and slightly paler in the distal part, thick-walled, septate, 180-265 μm long and 4.5-6.0 μm wide. The conidiogenous cell is apical, integrated and polyblastic (fig. 7). The conidia are acrogenous (fig. 2) on the conidiophore and its sympodially produced successive proliferations (figs. 3-5, 7-9), blastic, solitary, nearly hya-



Figs. 1-10 - *Blastophragma subulata* ex Type (S 121a). Fig. 1, conidiophores; Fig. 2-9, conidiogenesis: stages in the development of primary (Fig. 2) and later conidia (Fig. 3-9), Fig. 10, mature conidia.

Figs. 1-10 - *Blastophragma subulata* ex Type (S 121 a). Fig. 1, conidiophores; Figs. 2-9, conidiogénèse: étapes du développement d'une première conidie (Fig. 2) et d'une suivante (Figs. 3-9), Fig. 10, conidie mûre.

line, subulate with a flat basal scar, gradually narrowing above, smoothly rounded at the tip, straight but mostly with a dorsiventrality, smooth, several times (mostly 7-12)-distoseptate, sometimes somewhat constricted at one or more septa, dry, (15)-19-25 μm long, 4.5-6.0 μm wide (fig. 10). The conidial wall is dark-coloured and

dematiaceous; the basal scar of conidium is about 3 μm wide. Conidiogenesis is illustrated in Figs 2-9.

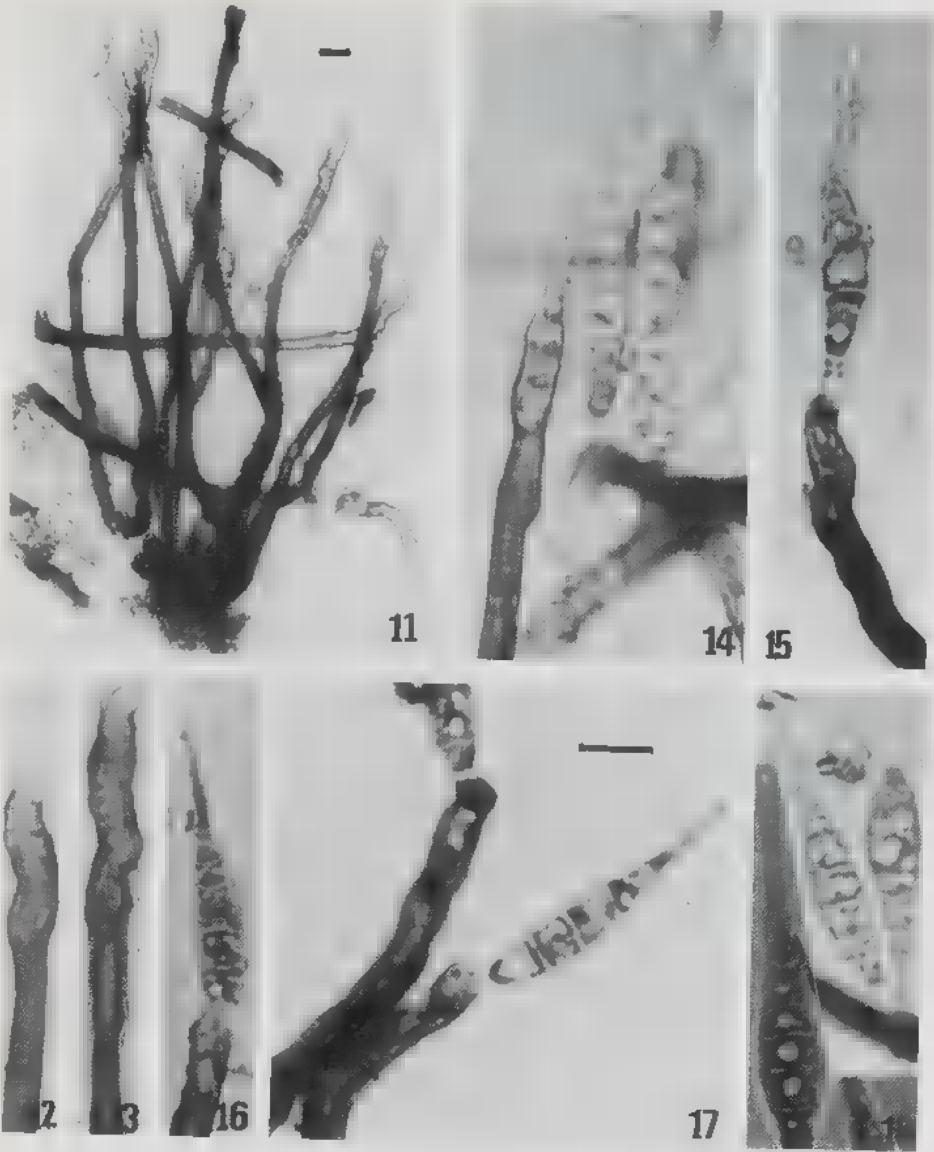
2. Another interesting hyphomycete with somewhat similar features was collected on dead twigs of *Antidesma cuspidatum* (Stilaginaceae) from Singapore. A description of the fungus is given below:

The fungus forms effuse, greyish brown, superficial colonies on the substratum. The mycelium is composed of branched, septate, subhyaline to brown hyphae, 2.5-4.0 μm wide. The conidiophores are caespitose, crowded, arising from a dark brown pseudoparenchymatous stroma (fig. 11), erect, straight, flexuous or bent, dark brown and thick-walled except in the distal part which is paler, subhyaline and thin-walled, simple, with a stout basal cell, cylindrical below, somewhat geniculate and wider above, septate, 80-360 μm long and 4-6 μm wide. The conidiogenous part is 31-45 μm long, 4-7.5 μm wide. The conidiogenous cell is apical, integrated and polyblastic. The conidia are blastic, solitary, acrogenous on the conidiogenous cell and its successive sympodially developing, closely spaced proliferations (figs. 12-17), dry, perfectly hyaline, subobclavate to subfusiform, straight of dorsiventral, smooth-walled, mostly 4-distoseptate, narrowed to a flattened base below, rostrate at the apex (figs. 17,18), 40-50 μm long and 7-10 μm wide. Width of conidial scars is 3-4 μm .

TAXONOMY

Both fungi share certain features: both are dematiaceous and produce solitary conidia blastically and acrogenously on the conidiogenous cell and its successive sympodially produced proliferations. The conidiogenous cell is integrated, apical, polyblastic. The conidia are several times distoseptate and have flattened basal scars. Both fungi invite comparison with the genera *Pseudospiropes* M.B. Ellis and *Chionomyces* Deighton & Pirozynski, especially from the solitary phragmoconidia produced blastically and acrogenously on the conidiogenous cell and its successive sympodially produced proliferations. *Chionomyces* is typified by *C. meliolicola* (Ciferri) Deighton & Pirozynski. It is a moniliaceous (completely hyaline) fungus and is a hyperparasite. The conidiophores may proliferate both sympodially and percurrently. Three other species described by Deighton & Pirozynski have similar features and are clearly congeneric. The two fungi herein described by the author clearly cannot be placed in *Chionomyces* since they are dematiaceous and are not hyperparasitic. In *Pseudospiropes* as typified by *P. nodosus* (Wallr.) M.B. Ellis, the conidial scars and the scars on conidiogenous cells are both cicatrized. These features are also seen in *P. simplex* (Kunze ex Pers.) M.B. Ellis (Ellis, 1971). Cicatrized scars are not seen in the two fungi described here. *P. obclavatus* M.B. Ellis (Ellis, 1976, fig. 161) has some features of the Malaysian fungus herein described but in *P. obclavatus* the conidia may be rugulose or verruculose and not always smooth. The conidial size also differs. In *P. obclavatus* the conidial scars do not seem to be cicatrized, but a redistribution of this species cannot be made without further study. The genus *Subulispora* Tubaki as typified by *S. procurvata* Tubaki (apud Tubaki & Yokoyama, 1971, *Trans. Mycol. Soc. Japan* 12: 20-21) was also considered as a possible repository for the two fungi described here. In *Subulispora* the conidia are produced on an integrated, polyblastic conidiogenous cell, but the conidia are euseptate and the conidiophore has a radially lobed basal cell typical of the Beltranieae (see Pirozynski, 1972). The two fungi described here are out of place in *Subulispora* also.

Since no genus of dematiaceous hyphomycetes is known to the author in which the two fungi may be appropriately placed, and since they appear to be congen-



Figs 11-18 - *Blastophragma rostrata* ex Type (S 101). Fig. 11, conidiophores arising from a stroma; Fig. 12-13, conidiophore with apical conidiogenous cell. Fig. 14-17, conidiogenesis: development of primary (Fig. 14) and secondary (Fig. 15-17) conidia. Fig. 18, mature conidia.

Figs 11-18 - *Blastophragma rostratu* ex Type (S 101). Fig. 11, conidiophore dressé à partir d'un stroma. Figs 12-13, conidiophore avec cellule conidiogène apicale. Figs 14-17, conidiogènèse: développement d'une première conidie (Fig. 14) et d'une suivante (Figs. 15-17). Fig. 18, conidie mûre.

eric, they are accommodated in a new anamorph genus *Blastophragma* as two new species.

***Blastophragma* Subramanian anamorph gen. nov.**

Dematiaceous hyphomycete producing blastic conidia. Conidiophores macronematous, mononematous, mostly simple, brown, septate. Conidiogenous cell integrated, apical, polyblastic. Conidia hyaline or dematiaceous, solitary, dry, distoseptate, acrogenous on conidiogenous cell with successive sympodial proliferations.

Hyphomycete dematiacea conidia blastica producens. Conidiophora macronematosa, mononematosa, plerumque simplicia, fusca, septata. Cellula conidiogena integrata, apicali, polyblastica. Conidia hyalina vel fusca, solitaria, sicca, distoseptata, acrogena ad cellula conidiogena cum successive sympodialiter proliferationes.

Etym. from Greek, *blasto* and *phragma*.

Species typica:

***Blastophragma subulata* Subramanian anamorph sp. nov.**

Colonies superficial, effuse, greyish to brown. Conidiophores caespitose, erect, straight, bent or flexuous, dark brown, geniculate and paler in the distal part, thick-walled except in the distal part, septate, 180-265 μm long, 4.5-6.0 μm wide. Conidiogenous cell integrated, apical, polyblastic. Conidia solitary, blastic, dry, acrogenous on conidiophore and successive sympodial proliferations, nearly hyaline (wall dematiaceous), subulate with flat scar, narrowed above, smoothly rounded at tip, straight, mostly dorsiventral, smooth, 7-12-distoseptate, sometimes constricted at one or more septa, (15)-19-25 μm , 4.5-6.0 μm wide.

Type: on dead twigs of unidentified plant, Cameroon Highlands, Malaysia, 7 May 1987, coll. C.V. Subramanian, No. S 121 (a).

Coloniae effusae, griseae vel brunneae. Conidiophora caespitosa, erecta, recta vel flexuosa, fuscoatra, apicem versus pallidiora, crassitunicata, apicem versus tenuitunicata vel geniculata, septata, 180-265 μm longa, 4.5-6.0 μm lata. Cellula conidiogena terminalia, in conidiophoris incorporata, polyblastica. Conidia acrogena ex cellula conidiogena et sympodialiter proliferationes, solitaria, sicca, laevia, leniter dematiacea, subulata, recta vel dorsiventralia, 7-12-distoseptata, nonnumquam vix constricta ad septa, (15)-19-25 μm longa, 4.5-6.0 μm lata.

TYPUS lectus ad ramulos emortuos ignota, Cameroon Highlands, Malaysia, leg. C.V. Subramanian, 7 May 1987, subnumero S 121 (a).

***Blastophragma rostrata* Subramanian anamorph sp. nov.**

Colonies superficial, effuse, greyish brown. Conidiophores caespitose, arising from dark brown pseudoparenchymatous stroma, erect, straight, flexuous or bent, simple, cylindrical below, wavy and wider above, brown and thick-walled, geniculate and paler and thinner walled distally, 80-360 μm long, 4-6 μm wide; apical cell conidiogenous, polyblastic. Conidia solitary, dry, blastic, acrogenous on conidiogenous cell and successive sympodial proliferations, hyaline, subobclavate to subfusiform, rostrate, mostly 4-distoseptate, straight or dorsiventral, smooth, with flat basal scar, 40-50 μm long, 7-10 μm wide.

TYPE: on dead twigs of *Antidesma cuspidatum* Muell. (Stilaginaceae), McRitchie Reservoir, Singapore, Coll. C.V. Subramanian, 26 March 1987, No S 101.

Coloniae effusae, griseo-brunneae. Conidiophora caespitosa, erecta, recta vel flexuosa, simplicia, cylindrica, fusca, crassitunicata, apicem versus pallidiora vel tenuitunicata vel geniculata, 80-360 μm longa, 4-6 μm lata. Cellula apicali conidiogena, polyblastica. Conidia solitaria, sicca, acrogena ad cellula apicali cum successive sympodialiter proliferationes, hyalina, subobclavata vel subfusiformis, rostrata, 4-distoseptata, recta vel dorsiventralia, laevia, 40-50 μm longa, 7-10 μm lata, cum hilum basali.

TYPUS lectus ad ramulos emortuos Antidesmae cuspidatae Muell. (Stilaginaceae), McRitchie Forest, Singapore, leg. C.V. Subramanian, 26 March 1987, subnumero S 101.

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